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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,807	07/21/2006	John M. Shannon	853663.445USPC	9063
38106 7590 09/11/2009 SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVENUE, SUITE 5400 SEATTLE, WA 98104-7092			EXAMINER LE, QUE TAN	
			ART UNIT 2878	PAPER NUMBER
			MAIL DATE 09/11/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/586,807	Applicant(s) SHANNON ET AL.	
	Examiner Que T. Le	Art Unit 2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-11 is/are allowed.
- 6) ☐ Claim(s) ____ is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/21/06</u> . | 6) <input type="checkbox"/> Other: ____. |

This is in response to Applicants' preliminary amendment filed July, 21, 2006.

This application is in condition for allowance except for the following formal matters:

The Priority Claimed under 35 USC 119 condition of the application is unclear because the "Priority Claimed" box in the Oath/Declaration has not been designated. Clarification and correction are required.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Each section of the present specification should be preceded by a heading (i.e. Summary of the Invention, Brief Summary of the Drawings, Detailed Description of the Drawings, etc...).

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The

Art Unit: 2878

disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In claim 1, on line 4, "under or over" should be changed to "over" since the feature(s) of a barrier layer being disposed under the semiconductor layer is not found in the present specification. On line 5, "(24)" should be deleted. Also, on line 16, "structure" should be changed to "phototransistor".

In claim 6, on lines 1-2, "any preceding claim" should be changed to "claim 1".

In claim 8, "with each phototransistor" should be inserted before "according to claim 1" since an array of phototransistors has not been previously recited in claim 1 but a transistor.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 25 USPQ 74, 453 O.G. 213, (Comm'r Pat. 1935).

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Claims 1-11 are allowable over the prior art of record because the prior art fails to teach a phototransistor comprising a photo-sensitive semiconductor layer; a barrier layer extending across an active region of the semiconductor layer and over the layer; a drain region laterally spaced from the active region; a drain contact connected to the drain region; a source layer on the side of the barrier layer; a gate layer on the opposite side of the semiconductor layer and laterally overlapping the barrier layer for controlling

Art Unit: 2878

the barrier height of the barrier layer to control conduction of electrons and holes between the source layer and the active region; and a gate insulator layer between the gate layer and the semiconductor layer, wherein the phototransistor allows light incident on the phototransistor to reach the active region to create electron hole pairs in the active region, the holes accumulating at the barrier to change the effective barrier height and hence the current flow between source layer and drain region through the active region.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

I) Nakazato et al 7,132,713 disclose a controllable conduction device having electrostatic barrier.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Que T. Le whose telephone number is (571) 272-2438.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Epps Georgia, can be reached at (571) 272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 2878

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Que T. Le/
Primary Examiner, Art Unit 2878